

Schoenberg's Op. 11, No. 3: Composing with Tones of the Motive

Op. 11, no. 3 de Schoenberg: Composto com notas do motivo

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Abstract: The third piece of Schoenberg's Op. 11 has been associated with his brief period of "radical athenaticism." In our study, we provide strong analytical evidence against this claim. The piece is the result of developing variation applied to an initial *Grundgestalt*. In other words, the organic conception of form that characterized his entire body of work also structures this composition.

Keywords: Schoenberg. Radical athenaticism. Developing variation.

Resumo: A terceira peça do Op. 11 de Schoenberg tem sido associada com seu breve período de "atematismo radical." Em nosso estudo, fornecemos fortes evidências analíticas contra essa afirmação. A peça é o resultado do desenvolvimento da variação progressiva aplicada a uma *Grundgestalt* inicial. Em outras palavras, a concepção orgânica da forma que caracterizou todo o seu corpo de trabalho também estrutura essa composição.

Palavras-chave: Schoenberg. Atematismo radical. Variação progressiva.



In my workshop language, when I talked to myself, I called this procedure “working with tones of the motif”.

—Schoenberg 1975, p. 248

1. Introduction

Op. 11 No. 3, completed in 1909, marked the beginning of Schoenberg's short period of “radical athematicism.”¹ This period, along with the specific piece, has been regarded as a profound rejection of the traditional thematic conception of musical form, as we shall see below.

In our paper, we will first provide a brief description of this historical conception, citing viewpoints expressed by notable scholars. Subsequently, we will thoroughly analyze the entire work to present our own insights, which differ significantly from previous ones in several respects.

Over the past two decades or so, this piece has been the focal point of a fascinating debate concerning its position in Schoenberg's oeuvre. Regarded as an extreme example of athematism within his compositions, Op. 11 No. 3 has prompted opinions such as that of Simms, who wrote (2000, p. 66²):

its coherence stems from principles of organization and expression that are strikingly different from those in music that Schoenberg composed only a few months before. [...] Developing variations upon distinctive motives and phrases, heretofore basic to Schoenberg's conception of music as coherent discourse, are almost entirely absent [in Op. 11 No. 3], and the composer has also dispensed with the traditional large-scale formal architecture that closely linked his early atonal works with classical practices.

In the same vein: Piece No. 3 is very different, since traditional thematic development and recapitulation does not occur. ... There is no development of motives or developing variation per se, in the sense that Schoenberg used the term *motive* for “a memorable shape or contour.” (op. cit., p. 67)

Simms also pointed out the contradiction with many of Schoenberg's previous and subsequent statements. For him, this approach represented a departure from the classical ideal of form that he had adhered to in his earlier music and emphasized in his later writings:

The chief requirements in the creation of a comprehensible form are *logic* and *coherence*,” he wrote in the *Fundamentals of Musical Composition*. “The

¹ Haimo, 2010, p. 14.

² The Atonal Music of Arnold Schoenberg, 1908–1923. Oxford University Press.

presentation, development, and interconnexion of ideas must be based on [their] relationship. (ibid., p. 70)

Likewise, Haimo (2006³; 2010⁴) contended that in a matter of days, Schoenberg's compositional language underwent:

a radical transformation, perhaps the most dramatic, abrupt, and far-reaching transformation of his entire career... Schoenberg went from writing intensely motivic music to writing music in which there were no repeated themes, no recurrent motives, and a complete avoidance of learned devices (2006, p. 318). [...] Simply put, there is no motivic basis for relating the various sections of the work to another. (Haimo 2006, p. 334)

For Haimo, what characterizes Op. 11, No. 3 is:

its lack of any return to prior material. Instead of placing a limit on the expository section, Schoenberg continues on to more phrases or groups of phrases that introduce still more new ideas. The opening ideas do not give way temporarily to other ideas; they give way permanently to those ideas, which – in turn – have their own fleeting moment on center stage only to disappear forever. (ibid., p. 337)

In Schoenberg's output, motivic return had been

a *sine qua non* of musical structure. Although organicism was not present from the beginning of his career, Schoenberg had never done anything remotely like what he does in Op. 11, No. 3 or in the compositions that were to follow over the course of the next few years. By any measure, his sudden abandonment of the principle of motivic return is as surprising as it is unprecedented. (ibid., p. 337)

In the piece, traditional compositional devices and techniques “vanish, utterly and completely, not only between phrases (as would necessarily be the case given the lack of thematic/motivic return) but even within phrases.” (Ibid., p. 338)

For Haimo, all of these abrupt changes, which were intensely described, might have been motivated by a deaf struggle with Webern regarding who was leading the musical avant-garde of the time (Ibid., p. 338 and ss.).

As we have observed, both Simms and Haimo agree on the absence of motivic recurrences, meaning there are no salient configurations of pitches and rhythms. However, as we will clarify below, what we have discovered, on the

³ Schoenberg's Transformation of Musical Language (New York: Cambridge University Press).

⁴ The rise and fall of radical athematicism. In *The Cambridge Companion to Schoenberg*, pp. 94–107. Edited by Jennifer Shaw and Joseph Auner. Cambridge University Press

contrary, is the nearly constant repetition and recurrence of a pitch motive or fragments of it throughout the entire piece.

Jack Boss has suggested instead that the piece, despite its problematic nature, remains connected through two motivic processes presented in the first piece of the opus - an "expanding" one and an "explanatory" one (Boss 2015, p. 25 and ss.). According to him, these processes make the whole work function as a cycle: Even though the third piece's musical form is more fragmented than either of the first two, the second can also be understood as more fragmented than the first, creating an incremental dissolution of large formal units (2019, p. 42).

In his description set classes are involved, along with their inherent high level of abstraction. The nature of the processes' description reveals this fact:

The three main processes that we will trace through [the three pieces of the opus, are]: (1) the incremental interval expansion of the first piece's opening motive, $\langle -3, -1 \rangle$; (2) the abstraction of the first process to an incremental expansion of the ordered pitch-class intervals in prime forms of set classes, which typically features the set classes 3-2, 3-3, 3-4, 3-8, and 3-5 (usually in that order); and (3) processes by which foreign interval successions belonging to set classes 4-19, 3-5, and others are "explained" by following them immediately with renditions of the same set class that are clearly derivable from $\langle -3, -1 \rangle$. (2019, p. 42)

Although the process of set-class expansion and its description are standard, we have quoted the paragraph extensively to facilitate comparison. We agree that the piece was organically conceived and worked out. However, our focus for the description and explanation will concentrate on pitch structures.

Essentially, we propose that what is at stake in the piece is developing variation in its most abstract form, that of the abstraction of rhythm from the motivic development. It embodies what Schoenberg himself imagined when he stated, "music could renounce motivic features and remain coherent and comprehensible nevertheless" (Schoenberg, 1975, p. 88).

Another abstraction process at work in the piece involves freeing the musical material from traditional formal constraints. In other words, the musical material is treated as musical prose: a direct and straightforward presentation of ideas without any patchwork, mere padding, or empty repetitions. Schoenberg referred to it as a "freedom of construction comparable to that of a language" (Schoenberg, op. cit., p. 429). It is controlled by developing variation only,

ensuring logical development through the concatenation of musical ideas derived from one another. In this piece, musical prose and developing variation are related because, as Frisch (1990, p. 8) stated, “Developing variation – the principle according to which ideas are continuously varied – provides the grammar by which the musical prose is created.”⁵

2. Analysis

As we proceed to demonstrate, almost the entire piece is derived from the first motive, considered as a pitch reservoir devoid of rhythmic contents. This suggests that developing variation was employed while preserving pitch content, which can be understood as “composing with the tones of the motive.” The derivations occur in two main ways: diastematic fragmentation and recombinations of those fragments. Dyads, the smallest fragments, are always adjacent, whereas bigger ones were considered when pitch content was preserved, even though they were not adjacent beyond the dyads. Few non-adjacent segments were taken into account, mainly due to registral proximity, aiming to signal non-local links for formal integration. When these criteria were insufficient to explain the musical surface, abstract intervallic sets, also derived from the motive, were considered (this can only be thought of as happening in section x, see below).

In the following discussion, each note will be marked in red with the order number in which it appears in the piece’s first bars’ main motive, its *Grundgestalt*. Derived intervallic sets will appear in green.

Before we delve further, given the fragmentary nature of the work, we will outline the general structure of the piece to facilitate understanding of the content in each of the sections:

Sections i (mm. 1–5), ii (mm. 5–7), iii (mm. 8–9), iv (mm. 10–16), v mm. 16–18, vi (mm. 18–20), vii (m. 21), viii (mm. 22–24), ix (mm. 27–29), x (mm. 30–31) and xi (mm. 32–35).

1) Section I (mm. 1–5, Ex. 1) introduces the main motive in octaves, found in the lowest part of the polyphonic texture. Almost every other element of the piece is derived from this motive (we numbered the notes from 1 to 21). This

⁵ Brahms and the Principle of Developing Variation. University of California Press.

Grundgestalt follows the structure of a varied sentence, which was Schoenberg's preferred formal type for developing variation: motive *a* is transformed into *a*1, *a*2, and *a*3 (in the cadence).

Example 1: mm. 1–3

The motive contains all pitch classes except for F and F#. It follows a clear derivative path, both in intervallic content and pitch. On the one hand, the intervallic content appears highly recurrent (as seen in Ex. 2a). The fragment can be explained as a succession, and at times overlapping, of sets such as (016) in red, (015) in green, and (012) in violet.

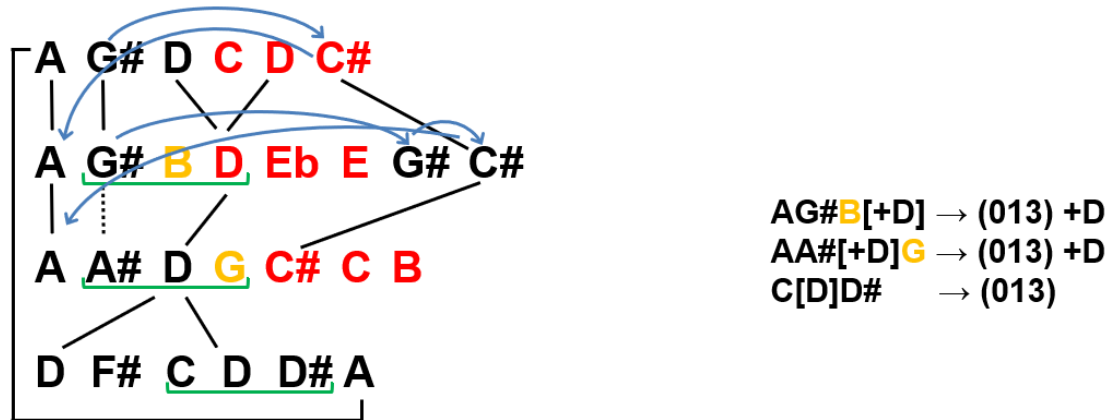
Example 2a: mm. 1–3 set analysis

Larger sets also play a significant role (Ex. 2b) like (0126) and (0237). Furthermore, there exists a systematic variation by increasing the size of an interval in the initial sets of the fragment: (0126), followed by (0136), (0146), and (0156) in black.

Example 2b: mm. 1–3 set analysis, cont.

On the other hand, if the recurrence of the note A divides the entire group of pitches into three subgroups (as shown in Ex. 3), the first one introduces G# and then a (012) set (in red in the example, ending in C#). The second group starts the same way, introducing a new pitch B, followed by another transposed (012) set (with D constant), and finally the fourth note, G#-C# (marked with arrows). In the last group, A# appears instead of G# (i.e., an inversion), from which a (037) set begins (a varied transposition of the (036) one, both underlined in green), starting at the same place as the previous subgroup (with D constant again). Finally, another (012) set appears (including C# as the last note of the former subdivision). Also, note that the first two C# notes are followed by A, which is the first pitch of the varied restatement of the subgroups.

The notes B and G (in yellow in the example) are yet to be explained. Both are a whole tone apart from A, and together with G# and A# (the second notes in each A recurrence), they complete the chromatic progression within the G–B gap, establishing, at the same time, the lower limit of the motive collection (keeping in mind that F and F# are missing: G-G#-A-B♭-B-C-C#-D-E-E♭). Each of these notes is part of a (013) set with D interleaved: A-G#-B[+D] and A-A#[+D]G.



Example 3: mm. 1–3 pitch analysis

At the same time, the top pitches in the highest staff (Ex. 4) configure closely related arpeggios: two (037) consisting of the notes E-A-C (12-13-14-15 from the motive), and an augmented one (048) consisting of C-E-A♭ on one hand, and C-E-A♭ on the other, considering the beginnings and endings of the groups (marked as y and y+ respectively). The G# in the middle of both groups functions as a symmetrical axis between them.

The melody in the middle register presents an ascending collection of C#-D#-F#-G# (marked as x). This collection could be considered as the first six notes of C# minor/major, depending on whether E or F is considered in the upper arpeggio. Additionally, whenever F occurs, we tend to associate it with A in the upper voice and E \flat as a derivation of x. This pattern appears on many occasions.

y: arpeggio, G# symmetry axis
y+: augmented arpeggio
x: mm. 8-9

Example 4: m. 1 highest staff analysis

Fragments of the motive (Ex. 5) are also prominently featured in the right hand. For instance, the first six attacks (of both hands) serve as an anticipatory exposition of the motive's pitch content in m. 1 (from number 10 to number 15, underlined in red in the example): E-G# (12-13), E \flat -D \flat (11-14), D (10), and A (15), along with C (4) at the beginning of the measure (itself connected with A-G#-D, 1-2-3). This connection is structurally linked to the conclusion of the right-hand melody (m. 3, Ex. 6) just before the cadence: its last seven notes are notes 20-21 (C-B), 9-8 (B-G#), 13-16-15-14-17 (G#-B \flat -A-C#-D), which contains 7-6-5 (A-C#-D). Additionally, the last chord of the measure (the first of the cadence) completes the fragment with 8-9-10 (A \flat -B-D) in the upper notes.

On the other hand, not only the arpeggios but also the chords are part of the motive. For instance, the highest chord in m. 1 consists of a 17-18-19-20 fragment plus a 12-14-16 in the middle staff.

Example 5: fragments of the motive in m. 1

Example 6: m. 3, end of the right-hand melody

The rest of the upper system of mm. 2–3 is constructed with the same materials, fragments of the motive and horizontal and vertical arpeggios (Ex. 7)

Example 7: mm. 2–3 upper system

The section concludes with the introduction of a new note, F# (which tends to appear associated with the interval class 6), into the motive (see Ex. 8). The first two sets, (016) and (026) (A-G#-D and G#-D-C respectively), are retrograded and

transposed to (026) (D-F#-C) and (016) (D-D#-A). Other notable connections to the *Grundgestalt* are the (013) group formed by C-D-D# (C-D are order numbers 4-5 and D-E \flat 10-11 respectively) and the fact that the first note of the piece, A, is also the last note of the section which contributes to the sense of completion of the fragment.

Example 8: mm. 3-5, end of section

That A, order numbers 7-15, is also connected with the C#, order numbers 6-14, the first note of the following section and, as mentioned earlier, a very important note in our segmentation of the *Grundgestalt*. These two notes, along with D# (m. 4), constitute the notes of the middle staff melody of m. 2.

Section ii (mm. 5-7) initiates with the fragmentation of the motive, utilizing the piece's main variation technique (Ex. 9). In effect, nearly every configuration is a fragment of the motive or a transposition of such a fragment, as stated in the analysis. In cases where the succession of ordered notes is not obvious, it is marked with an arrow. Otherwise, the relation is implicit in the numbers associated with each note.

Example 9: mm. 5-7

One of the most interesting variation techniques we found is based on the fact that many notes are repeated in the motive. In this way, Schoenberg produced a compressed exposition of fragments containing the repeated notes. This is evident in the case of the left-hand D in measure 6 (Ex. 9), as it simultaneously appears in three different segments of the motive: 2-3, 5-6, and 17-18-19. To a lesser extent, this also occurs with the notes G \sharp and C \sharp . Their recurrence and the numerous connections they establish play a key role in integrating the piece, which is formally quite discontinuous. In fact, in the *Grundgestalt*, D is connected to G \sharp -C-C \sharp -B-E \flat -B \flat and G (preceding or succeeding them), while remaining one of the most prominent pitches in the piece.

Structurally, this establishes a type of hyperintegration by connecting non-adjacent segments of the motive, thus unifying the musical space. What was originally presented successively and at different moments is now clustered around one common event.

Lastly, it is important to notice that when fragments are not directly related to the motive in terms of pitch class recurrence, they still conform to sets of the motive, anyway.

3] Section iii (mm. 7–9), a slow and pianissimo one, incorporates *x*, which is the middle melody from the beginning of the piece (Ex. 10). This melody is cited almost identically in the bass, specifically in mm. 8–9, concluding with the movement A \flat -A (2-1). This kind of cadence will appear multiple times throughout the piece. The progression E \flat -F, which appeared in m. 7, now appears in the two ascending melodies played by both hands. Along with the note A will resound frequently in the piece (i.e, E \flat -F in the cadence of section ii and A as the first note of the new section a (026) set). It is worth noting that A is part of *x*, but it sometimes appears to take on an independent sonority. Furthermore, the order of the first segment numbers 12 to 10 (E-D \sharp -D) in the right hand is later included in a 1-12 sequence played by both hands.

Example 10: mm. 7–10

4] Section iv (mm. 10–16) is related to the previous one (Ex. 11) through the ordered pairs 15 (A, last note of the former) – 16 (B \flat , first note of the latter) in the left hand and 1 (same note as before) – 2 (G \sharp , first note of the melody in the right hand).

We divided Section iv into three subsections based on pitch and intervallic consistencies. Two of these subsections begin with G \sharp -B in mm. 10 and 11–12 respectively (Ex. 12), while the third one varies it to A \flat -A in m. 14 (Ex. 13). Furthermore, all subsections end and begin with (012) (A-B \flat -G \sharp in mm. 9–10, G-G \flat -G \sharp in m. 11, B \flat -A-A \flat in mm. 13–14), finally leading to C-D-C \sharp in m. 16 where Section v starts (Ex. 13).

Example 11: mm. 9–11

the last part of the melody is a 1-4-2 (A-C-G#). Finally, D and C#, now as ordered numbers 17 and 19, respectively, complete the fragment with G (18), the last tone of the section. Relations also occur independently of the pedal chord; for example, 9-7 (B-A) in the melody and 11-12 (D#-E) in the right-hand chord are related to the A \flat in the augmented chord (left hand) considered as 8 and 13, respectively.

Lastly, another (016) is established between the two most salient notes of the pedal, C#-D (19- 17, respectively), and G (18), the last pitch of the melody.

6] For motivic reasons, Section vi was divided into two smaller subgroups: vi up to m. 20 (Ex. 15a) and vi1 from m. 21 (Ex. 17). At the beginning of vi, the pitches A (the highest note of the right-hand chord) and EbDb (the first two notes of the left-hand descending line) form a reordered version of the small non-adjacent motive from the middle staff of m. 2, namely Eb-D \flat -A (12-15-16). Simultaneously, all the pitches in this part, together with the last note of section v (G), complete the motivic segment 13-18 (A \flat -D \flat -A-B \flat -D-G). Additionally, the group 13-15 (A \flat -C#, the last notes of the bottom and middle staff in m. 18, and A, the top staff beginning of m. 19), links the three registers.

Measure 19 is structured around an important segment of the motive 5 to 16 (D-C#-A-A \flat -B-D-D#-E-A \flat -C#-A \flat -B). In the example, inner voices' pitches (5 and 10, both D) are in brackets because they don't have the salience of the others.

Example 15a: mm. 18–21

Example 15b: mm. 18–21, set analysis

The way m. 20 is integrated is striking; almost every note is part of the motive. Even the left-hand last segment is linked through A^b (13 and 8), both to the previous one in the same hand (its last note is E, 12) and to the upper melody's final note B, 9. The latter, 11-10-9 (D^\sharp -D-B), continues with 8-6-7 (A^b - D^b -A), and the former with 12-13-14-15 (E- A^b - D^b -A), two fragments involving the same pitches. Finally, the last note G, seemingly disconnected, serves as the nexus with vi1 as part of the long fragment that pervades the lower line in measure 21: 18-17-19(14)-16-15 (G-D-C $^\sharp$ -B b -A, Ex. 17).

Complementing the main thematic content, there are many instances of (016), two of y^+ and three of x (Ex. 15b). Of the latter, two are important: on the one side, the high FA dyad in the right hand together with E^b (the lowest note in the same chord at the beginning of m. 19), and on the other, the conspicuous octave melody in m. 20 (D-E-G-D-A-E).

There is also a long-range connection, one of the most interesting facts about the fragment (Ex. 16). In effect, the upper notes of the high y^+ chord (F-A) in m. 19 function as a sort of structural resolution (delayed by section v) of the big "dominant" section iv, built on the same register dyads E-G $^\sharp$ (12-13) from m. 15. This establishes an unexpected but significant telos between sections, enhanced not only by the presence of the first trichord of the motive (A-G $^\sharp$ -D, indicated in red, green, and yellow, respectively) but also because the highest notes form a 12-13-14-15 ordered fragment.

Example 16: mm. 14–19

Subsection vi1 (m. 21, Ex. 17) presents a variation of the first part of vi. Both vi and vi1 consist of a two-octave ascending augmented arpeggio $y+$. Main distinctions lie in vi1 being transposed a half step down (from A-C#-F to G#-C-E), and expanded rhythmically.

Furthermore, in vi1 (Ex. 18) the most prominent first five notes are G#-D-C#-A-C (2-3(5)-6-1-4), which are essentially the same five notes found at the beginning of the piece. These notes are embedded in a 1-10 group

Additionally, the most prominent pitches of the last three attacks of the cadence, a (026) set (G#-B \flat -D), show a variation from those present in the cadence of the first section, in mm. 3–4 (D-F#-C), which is also a (026) with D constant (Ex. 18).

Finally, the dyad 1-2 (A-G#, the last thirty-second chord), along with the highest and last note of the subsection (D, number 3), and the first note of the following section, (C number 4), once again form the four pitches found at the beginning of the motive (Ex. 17).

7] Section vii (mm. 22–24) presents another slow and pianissimo passage (Ex. 19). It reintroduces the first notes of the motive from 1 to 8, which constitutes a partial repetition of those previously described in subsection vi1. Similarly, the section concludes with a restatement of the first four notes of the motive, followed by an embedded 12-13 (high E and low A \flat) and a recurrence of the left hand's octave transposed E-F# pattern from m. 22 (both in a (025) set). Additionally, there is a distinct connection with the subsequent section: the left hand's lowest notes in m. 23 (A-E-B in the chord and B \flat -A \flat) and the D in the right hand's final attack of the measure (while the other notes are repetitions) form a

7-8-9-10-12-13 fragment of the motive. The missing number 11 (D#) is the first note of the main melody in m. 24, marking the beginning of section viii.

Example 17: mm. 20-22. This musical score shows two voice parts, vi1 and vii. The score is annotated with various tone sets and intervals. Red boxes labeled 'lev. m. 1: AG#D' are placed above the first and second staves. Blue lines connect the notes of the first staff to the second staff. Green lines connect specific notes to the tone set label '(026)'. Red lines connect notes to interval labels such as '2-8-13', '4-20', '13-2', '3-17', '1-7-15', '6-14-19', '13-8', '14-6', '15-7', '3-5-10-17', '6-14-19', '15-1', '10-3', '16', '7-15', and '6-14'. Underlines in red highlight the tone sets '15-16-17-18-19' and '1-2-3-4-5-6-7-8-9-10' in the first staff, and '1-2-3-4' and '13-14-15-16-17' in the second staff. The number '11' is written above the first note of the second staff.

Example 17: mm. 20-22

Example 18: mm. 3-4 and 21 set constancy. This image shows two pairs of musical staves. The left pair shows measures 3 and 4, and the right pair shows measure 21. Green lines connect the notes between the two pairs, illustrating the constancy of the tone set (026) across these measures. The tone set label '(026)' is written in green above the first staff of each pair.

Example 18: mm. 3-4 and 21 set constancy

The image shows a musical score for two sections, vii and viii, spanning measures 22 to 24. The score is heavily annotated with green lines connecting notes across measures, indicating a large-scale group. Red lines and arrows highlight specific groupings and transitions. Chord symbols (016), (026), (025), and (027) are placed above notes. Measure numbers and groupings like '1-2-3-4-5-6-7-8', '7-8-9-10-12-13', and '1-2-3-4' are written below the staff. A 'y+' symbol is also present above a note in measure 15.

Example 19: mm. 22–24

8] In section viii (mm. 24–26), almost every note once again belongs to the motive (Ex. 20a). The melodic pitch content combines fragments of *y*, *y+*, and *x* (Ex. 20a and 20b).

However, local motivic constancy prevents the subdivision of the group in the silence of m. 26. Firstly, the connection is ensured by the succession of *y*-*y+* (the ascent *EG#* is a clear transposition of the one in m. 18 at the beginning of section vi, which is also a *y+* arpeggio). Additionally, there's a constant chord (016) (*C-C#-G*, measures 18-19-20) in both sections. Secondly, the descending pattern *B#-E-Eb-F* (distributed in both hands at the beginning of m. 24) is subsequently elaborated and presented in the same measure as *G-D-C#-C* and, in m. 26, as *D-Eb-D-C*.

Particularly interesting is the configuration in m. 26: the high *G#* (2, sounding with 1, *A*), the left hand's *D* (the sixteenth note), *C-Db* from the adjacent chord, and *B-D* in the left hand form a 1-10 group. The *B-D* dyad along with the previous one *G#-E* (13-12, in the same measure) are in octaves just like the main motive, where they are expressed in the same register. Simultaneously, the (016) chord and the two notes after it, the last three attacks in m. 26, constitute a 17-21 fragment. The final notes of the main motive are positioned at the end of this section (they are also embedded in the previous measure's larger group).

Finally, it's worth noting that *y+* is directly linked to the one in m. 15 (Ex. 16). This relationship is not only structural but also functional. Whereas the

“tension” accumulated up to m. 15 was “released” with the high A in m. 19, here the movement is oriented towards the A in m. 27 (see Ex. 20b), which marks the beginning of a new section (m. 19 is also similar in this respect).

viii

Example 20a: mm. 24–26

viii

ix

Example 20b: mm. 24–27

9] Again, most parts of section ix (mm. 27–29) are related to the motive (Ex. 21) as just dyads, larger fragments or the characteristic pitch class sets that saturate the surface (harmonically and melodically). The largest fragment is a 5-18 one (m. 29). Constructed around an AB trill, it includes all the other groups of the section.

ix

Example 21: mm. 27–29

One aspect we found particularly interesting was the tracking of another non obviously perceptible motivic structure that also helps to integrate the section (Ex 22). The basic material, in m. 27 (which is a variation of the $-2-5^6$ left hand descending line in m. 18), consists of descents: $-6-4$, $-1-4-3$, $-5-4$. Then, in m. 28 the varied scheme is presented rhythmically diminished. In m. 29 motivic compression occurs in the left-hand line (around de low B_b) and filtering in the right one. The latter transformed the ascending $F\#-G$ in m. 27 into $F\#-G\#$ in m. 29 (for quoting it literally right after, in mm. 29–30) over a long A-B trill. Finally in m. 30, section x, it appears transformed into A-B, the same notes of the trill.

ix

Example 22: mm. 27–30

10] Due to the connections with section ix, m. 30 (Ex. 23) could have been merely an extension of it if it were not for the minimal presence of the motive. Nevertheless, the connections are intriguing enough to warrant description.

⁶ Long dash stands for ordered intervals, therefore $-2-5$ means downward major second and perfect fourth.

Firstly, the ascending motive F#-G is retained (as previously noted). Secondly, the (025) set between the trill and F# (stemming from the aforementioned ascending motive) is constant in pitch when considering the last F# and the highest A and B in m. 30. Lastly, the ascending movement in the upper notes A-B also represents a variation of F#-G.

Section x (mm. 30–31) is, by far, the least integrated section of the piece (Ex. 23). The fact that the hyperconnected note D is almost absent (it only appears in the right hand second 16th note of m. 31) is highly significant, as we will demonstrate. Motive dyads are scattered, and there is only one large segment of it, 15-20, at the end of the section (the note A, 15, serves as a link with section xi). Nevertheless, and as always, the section is permeated by the motive sets (not only locally but also globally, such as the (027) set that links the highest notes of mm. 30–31), and it features numerous structural y+ instances. Additionally, between the two rapid 32nd note groups there is still an echo of the previous section's ascending motive, signaling, despite what has been said, its unavoidable tendency for integration.

The image shows a musical score for two staves, labeled 'X' and 'xi'. The score is heavily annotated with green lines and text. At the top, '(025) BAF#' is written in green. Below this, 'D is absent' and 'A is absent D is almost absent' are written in red. Various numbers (18, 1-7, 6, 9-21, 11, 12, 10-17, 19, 16, 15, 17, 16, 2-8, 20, 8, 11, 19, 18, 20, 20) are scattered throughout the score. Blue arrows labeled 'y+' point to specific notes. Red arrows point to notes that are absent or almost absent. At the bottom, three red boxes highlight segments: '16-17-18', '6-7-8-9', and '15-16-17-18-19-20'. The score itself consists of two staves of music with various notes and rests.

Example 23: mm. 29–32

11] The main characteristic of section xi (mm. 32–35) is its ostinato pattern (Ex. 24a), which is unique in the entire piece. These repetitions appear to have been necessary to suggest the approaching end. Most likely, it serves as a compensation for the piece's high level of fragmentation.

As usual, it is connected to the preceding section by sharing both motivic sets and ordered segments (Ex. 23).

The final cadence primarily comprises ordered dyads, with a significant fragment 14-19 (mm. 33–34) and a smaller one 9-11 that participates in the

cadence. Motive sets are widespread, and there are also numerous indirect intervallic connections to the main motive (Ex. 24b): the first six and seven notes of the piece share a similar intervallic content with the last seven notes, with a constant interval pattern (0123). Additionally, the notes of the cadence, along with Bb, share the interval pattern (012) with the first five notes of the piece.

The cadence also highlights the highly connected nature of the note D, which was almost absent in section x, as it is linked with every other note. D-F#, the connection that is less clear, constitutes the first part of the main motive cadence in mm. 3–4.

xi

Example 24a: mm. 32–35

Piece six first notes → G#ABCC#D (012356)

Piece seven first notes → G#ABCC#DEb (0123467)

Piece last seven notes → ABbBC#DEbE (0123567)

xi

Example 24b: mm. 32–35, connections to the main motive

3. Final comments

In this summary presentation of our analysis, we have described how the main motive of the piece, referred to as its *Grundgestalt*, arises from a derivative conception and how this thematic unit shapes the entire work.

In this work, Schoenberg notably achieved a kind of formal hyperintegration that aimed to unify the musical space by connecting non-adjacent segments of the motive, which were initially exposed successively and at different moments but eventually clustered around one common event.

The note D (and to a lesser extent A, G#, and C#) holds a significant hyperconnected status that unifies the musical space through hyperintegration. We considered the possibility of this being a consequence not of our thematic analysis but of the statistical distribution of pitches. However, according to Hugo Carvalho, the mathematician with whom we collaborated on this issue, it appears that this is not the case, as the probability of the observed data being merely "by chance" is very low⁷. Therefore, we concluded that the established connections

⁷ Here is his contribution: Let N_a be the number of transitions of main interest, that is $x-D$ or $D-x$, where $x \in X$ and being X a particular set of pitch-classes of interest. Let also N_b be the number of "complementary" transitions, that is, the transitions that are not of main interest, described by $y-D$ or $D-y$, where $y \in X$. If there is no preference in the notes preceding and succeeding D (that is, they are chosen uniformly, from a statistical viewpoint), the probability of any note precede or succeed D is equal to $1/11$. Therefore, the probability of any note on set X precede or succeed D is equal to $|X|/11$. Notice that the quantity $N_a / (N_a + N_b)$ is the observed frequency of notes in X preceding or succeeding D. Under the hypothesis that there is no preference of notes, this observed value $N_a / (N_a + N_b)$ should be similar to $|X|/11$. In our scenario, D is connected in the main motive with seven other notes, that is, $X = \{G\#, C, C\#, B, E_b, A\#, G\}$, therefore, $|X|/11 = 0,58$ and $N_a / (N_a + N_b) = 0,7733$. This last number comes from the collected data from the score, which consists of $N_a + N_b = 75$ occurrences of the note D, $N_a = 58$ of them are connections with one of the 7 notes of the theme. To verify that these values are statistically distinct, we perform a Binomial Hypothesis Testing (De Groot; Schervish, 2011), where we compare the null ("conservative") hypothesis of no preference of note succeeding or preceding D, which leads to the probability of 0,58, with the alternative ("innovative") hypothesis of a particular preference to the set X , which leads to the probability of 0,7733. Under the null hypothesis, the p-value of the test (which means the probability of observing data more discrepant, under the null hypothesis, than the observed ones) is equal to 0,04403%. Therefore, assuming the null hypothesis, the chance that the observed data was merely "by chance" is very low, which indicates that the null hypothesis does not hold on the observed scenario. Notice that to apply this test an independence and homogeneity hypothesis is also necessary, meaning that the appearance of one transition of the type $x-D$ or $D-x$ does not influence any other, being each one purely random by itself but with constant probability of occurring.

and relationships are stylistically and statistically relevant, derived from the subjective control of form.

This analysis together with the studies we conducted recently on the first and fifth pieces of the Six little pieces for piano Op. 19⁸ (both traditionally considered athematic) where we found the same general conception and similar procedures, provide compelling evidence against the ‘radical athematicism’ traditional hypothesis, at least in relation to pitch structures. Schoenberg’s organic conception of form permeates even his most fragmentary pieces.

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⁸ Rodríguez, Martínez 2022, p. 57 y ss.